

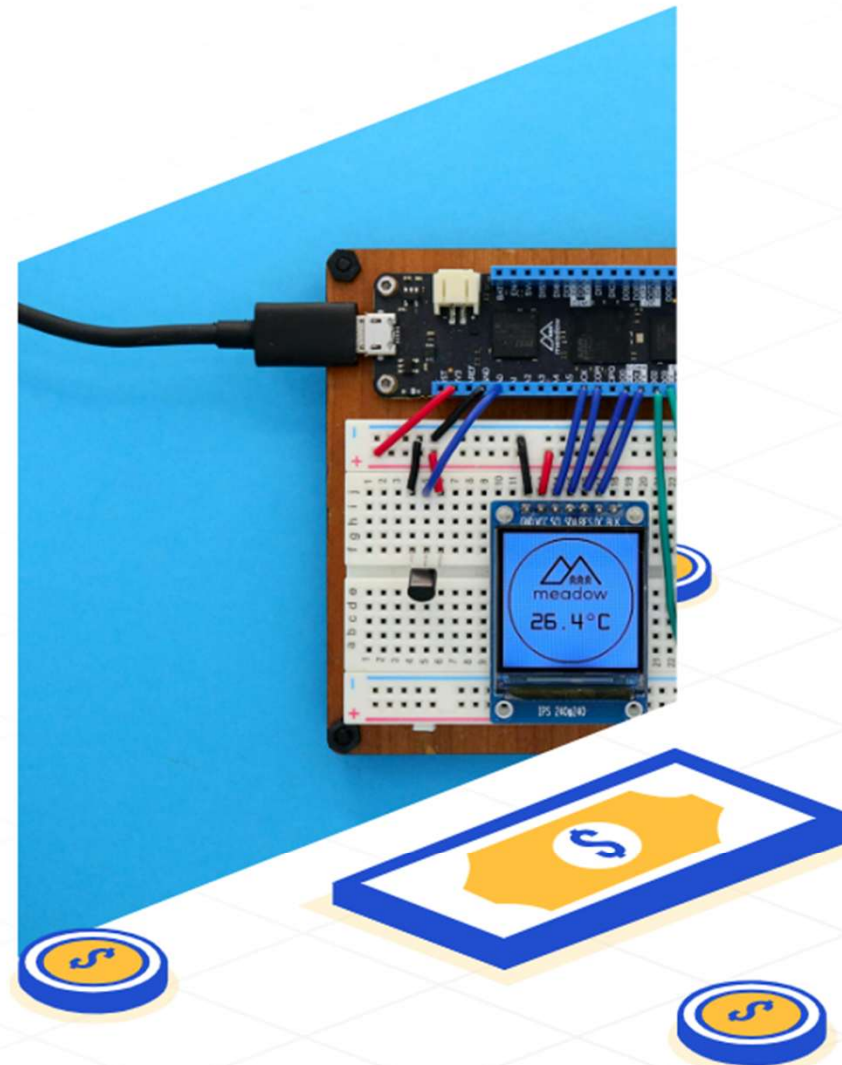
Attendify – Smart Attendance Management System

Attendify is a modern, scalable solution designed to automate attendance tracking with GPS verification, Arduino hardware and f.

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Problems with Manual Attendance

How traditional methods hinder accuracy, efficiency, and insights



Prone to **errors**: human mistakes and poor record accuracy



Lacks **real-time analytics** and actionable attendance data lacks **real-time analytics** and actionable attendance data



Vulnerable to **proxy attendance** and verification gaps



Not **scalable** for **large classrooms** or **institutions**.



Scales poorly: high **administrative overhead** for large records



Outcome: **impaired class management** and reduced student **tracking accuracy**

Attendance System: Verification & Recording Flow

A concise 6-step process ensuring physical presence, device identity, biometric validation, secure storage and real-time status



Student Request

Student initiates attendance mark from the portal or device.

Arduino Device Handshake

Arduino module performs device-level interaction to help confirm identity.

Secure Database Storage

Attendance record is written securely to the database.

GPS Location Check

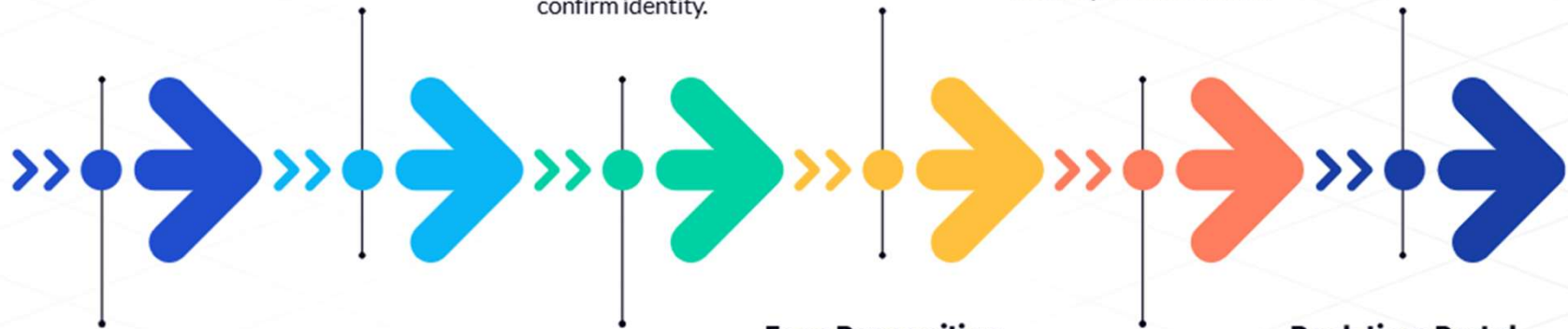
Verify physical presence via GPS to confirm classroom location.

Face Recognition Microservice

Python-based service validates the student's face biometrically.

Real-time Portal Update

Student portal updates attendance status immediately for transparency.



Student Portal: Key Features

Secure, real-time access to schedules and attendance



- 1 Login with a secure link-based flow to preserve data integrity**
- 2 Schedule display: view upcoming lectures and times at a glance**
- 3 Request attendance marking directly from the portal**
- 4 Real-time attendance status updates to track records instantly**
- 5 Reduces administrative queries and confusion; empowers students**
- 6 Shows student's details after logging on the portal**

Teacher Dashboard — Real-Time Attendance

Live visibility into lecture attendance for faster classroom management



- ◆ **Real-time updates** for each scheduled lecture — monitor attendance instantly
- ◆ **Instant absentee identification** to enable quick intervention
- ◆ **Anomaly detection** in attendance patterns for early flags
- ◆ **Reduces paperwork** and increases transparency in class records
- ◆ **Improves class management** with immediate, actionable insights

Key Technologies Powering Attendify

Hardware and software components enabling identity, backend, and responsive UI



Arduino — hardware modules for identity verification



Python + OpenCV — face recognition microservice



Node.js + Express — backend API services



MongoDB — efficient database management



HTML, CSS, React — responsive, intuitive frontend



Combined stack ensures scalability, performance, and maintainability

Improvements & Advanced Features

Planned security, analytics, and mobile enhancements to strengthen attendance integrity and insights

Face spoof detection to prevent fraudulent biometric attempts



QR code & multi-factor authentication for stronger access control



Mobile app to extend teacher access and on-the-go management



ML-based attendance prediction for trend analysis and forecasting



Advanced analytics dashboard providing deeper attendance insights



Push notifications to boost engagement and real-time alerts



Transforming Attendance Management

Fast, secure, scalable attendance via location, biometrics, and real-time analytics



- 1 Addresses manual attendance with **fast, accurate, and scalable** automation
- 2 Combines **location verification** and **biometric authentication** for secure checks
- 3 Provides **real-time data analytics** to streamline class management
- 4 Modular architecture enables **flexibility** and future enhancements
- 5 Positioned as a robust solution adaptable to varied educational contexts

Thank you!

Reach out for questions, collaboration, or feedback on attendance innovation.